AMSAT News Service Weekly Bulletins
Issue: ANS-153
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Sources: amsat-ans-1990-ans-153.01.txt

KA9Q used to post AMSAT bulletins on a regular basis. Awhile back I wrote to him and asked if he was going to continue doing it, and he said he was too busy. To get them on the local packet network, I have been calling the BBS in Texas every weekend where they are posted (214/394-7438) and downloading them. From now on I will post them here. I have made some minor changes to clean them up for packet, such as limiting titles to 30 characters, line length to less than 79 characters, and running them through a spelling checker (there seem to be 3 or 4 minor misspellings per week).

I encourage anyone who is on VHF packet to download them from the BBS, or get them here, and upload them to packet. BE SURE to preserve the bulletin IDs (BID$) so that we don't have multiple copies running around the packet network. This should help fill in some of the holes in distribution around the country.

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MCI Mail: 3288544
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or, tad@ssc.UUCP

SB ALL @ AMSAT $ANS-153.01
WO-18 STATUS REPORT

HR AMSAT NEWS SERVICE BULLETIN 153.01 FROM AMSAT HQ
SILVER SPRING, MD JUNE 2, 1990
TO ALL RADIO AMATEURS BT

WO-18 CCD Camera Iris Settings Experiments

For the past several weeks WEBERSAT-OSCAR-18 (WO-18) has been sending three to four pictures daily from outer-space. This continuous stream of imaging data has been part of an on going experiment by the students at Weber State University (WSU) to characterize the amount of natural light which enters the CCD camera for the various iris settings. The goal of this experiment is to find the proper settings for the camera iris for a particular light level. This will help considerably in improving the overall picture quality. With the integration of the on-board earth's sensors in the current software, the occurrence of over exposed pictures or totally dark pictures taken when WO-18 isn't earth pointing is no longer a problem. Chris Williams (WA3PSD) says that the painstaking task of manually setting the iris from the ground and observing the results will help software engineers in the future as they continue to understand the CCD camera operation. "The early days of random picture taking are gone," according to WA3PSD. There are 256 possible settings which ground controllers can command the camera iris to; a "zero" setting has the iris completely closed, a "255" setting has it wide open.

What will ultimately come out of this experiment is a look-up table in WO-18's software which will say "for this light level, use this iris setting."

For those wishing to take part in this experiment, WeberWare 1.0 is currently available from the AMSAT Software Exchange. Contact the Exchange at (301) 589-6062 for further information.
/EX
SB ALL @ AMSAT $ANS-153.02
WEBERWARE 1.0 USER QUESTIONS

HR AMSAT NEWS SERVICE BULLETIN 153.02 FROM AMSAT HQ
SILVER SPRING, MD JUNE 2, 1990
TO ALL RADIO AMATEURS BT

Most Asked Questions About WeberWare 1.0

WeberWare 1.0 is a software program for IBM PCs and clones which will take raw packets from WO-18 and turn the packets into pictures on EGA/VGA CRT screens.

Recently, as more amateurs start to use WeberWare 1.0, the following questions are being asked of AMSAT Area Coordinators about its use:

"Does the TNC [automatically] go into KISS Mode?"
The answer to this no. You must command your TNC into KISS mode by typing: KISS ON. After this, the TNC must be RESTARTed or turned off and back on so that it will actually start to operate in KISS mode.

"How do you store the files? As ASCII"
The picture data from WO-18 comes down as raw binary data, that is, it is not displayable as ASCII characters. As the data is received, your communications program must store the binary packets in a file. Do not be concerned about ASCII telemetry frames which occasionally come down along with the binary packets. WeberWare 1.0 ignores the ASCII telemetry.

"How do you upload a picture to WeberWare 1.0?"
When you store the data from a WO-18 pass, name the file so that its file extension has a ".RAW" and put the file in the same directory in which WeberWare 1.0 resides. After you have invoked WeberWare 1.0 and the main menu comes up, you will see an option for "PACKETS TO PIXELS." Upon choosing that option, WeberWare will give you a choice of all files that have file extensions ".RAW"

Chris Williams (WA3PSD) of Weber State University (WSU) points out that a complete picture file will take up about 156 Kbytes in a disk file. According to Chris, one can quickly start to run out of hard disk space in a HURRY!
/EX
SB ALL @ AMSAT $ANS-153.03
NOMINATIONS FOR AMSAT-NA BOD

HR AMSAT NEWS SERVICE BULLETIN 153.03 FROM AMSAT HQ
SILVER SPRING, MD JUNE 2, 1990
TO ALL RADIO AMATEURS BT

Nominations Period for Three Seats on AMSAT-NA BOD to Close Soon

Nominations are sought for the AMSAT Board of Directors. Directors are elected by the membership for two-year terms. Any member society or group of five members can nominate someone (a member) to run for the position.

This year there are three seats to be filled. Those directors whose seats are up for election are Phil Karn, KA9Q, Tom Clark, W3IWI, and the seat vacated by the resignation of Vern Riportella, WA2LQQ.

All nominations should be sent to AMSAT BoD Nominations, 850 Sligo Ave #600, Silver Spring, MD 20910 to arrive no later than June 15, 1990.
/EX
SB ALL @ AMSAT $ANS-153.04
SAREX PACKET HINTS (PART-1)

HR AMSAT NEWS SERVICE BULLETIN 153.04 FROM AMSAT HQ
SILVER SPRING, MD JUNE 2, 1990
TO ALL RADIO AMATEURS BT

You learn very quickly when venturing into the world of Packet Radio that unless you use the correct call sign when attempting to connect to another packet station, you won't get too far. Such is the case with the packet operation on SAREX. A number of publications reported earlier this year that the SSID for the SAREX packet ROBOT would be = 1 (ie: WA4SIR-1). Tom Clark, W3IWI, reports that both the HK21 ROBOT TNC and the operational software for the GRID laptop computer have the calls defaulted to WA4SIR (SSID = 0) and that call should be used unless, for some unanticipated reason, the defaults are overridden. Tom continues, the best advice is for you to MONITOR the downlink signals from STS-35 and use whatever call you see on the downlink. The ROBOT TNC code uses only one SSID at a time.

Because the WA4SIR SAREX ROBOT will be bombarded with signals from tens or hundreds of ground-based users when STS-35 is flying over populated areas, it is not possible for the ROBOT TNC and radio to use normal half-duplex packet procedures -- the CD (carrier detect) signal will simply never drop! The ROBOT will be running in a modified full-duplex mode. When the ROBOT copies a valid packet frame (or when it is time to send a beacon), the data to be sent is put into a buffer and a timer (which is called the FUDtimer) is started. The ROBOT firmware then queues all other outgoing transmissions in the buffer until FUDtimer expires (3 seconds later), and all downlink frames in the queue are sent in one long transmission. You may discover that the response time while running in this mode is sluggish when compared to normal packet operation.

Since the SAREX handheld radio cannot receive when it is transmitting, users should insure that they remain silent and listen when the shuttle is trans-mitting. In other words, DO NOT RUN FULL DUPLEX ON THE GROUND! Leave your TNC in half-duplex mode (FULLDUP OFF) with CD active just like you do for normal VHF packet operations.
/EX
SB ALL @ AMSAT $ANS-153.05
SAREX PACKET HINTS (PART-2)

HR AMSAT NEWS SERVICE BULLETIN 153.05 FROM AMSAT HQ
SILVER SPRING, MD JUNE 2, 1990
TO ALL RADIO AMATEURS BT

You should be careful with the setting of two of your TNC's timers: DWAIT and FRACK. DWAIT is the time interval after your Carrier Detect light goes out and before your transmitter turns on. You want to make sure your connects requests and acks are contained in the 3 second FUDtimer window. If everybody runs the same DWAIT (like the typical 0.1 - 0.5 second values used for terrestrial packet), then everybody will be transmitting at the same time. Part of the key to your success when uplink QRM is heavy is to pick a DWAIT that nobody else is using! (sort of like picking a lottery number!)

FRACK sets the time interval between your transmissions. After you send a frame, your TNC waits for the FRACK time, and then waits for the Carrier Detect signal to drop, then waits DWAIT, and then tries again. You should make sure your FRACK is at least 3 seconds so that you are not transmitting when the ROBOT's FUDtimer decides it is time for it to transmit -- if you

are transmitting at the same time, you will miss any packets the shuttle is addressing to you and you won't have a successful QSO.

Note that your DWAIT (how soon do I transmit?) and FRACK (then how long do I wait?) parameters and the need to stop transmitting so you can hear a reply are just like you encounter when working a DXpedition pileup on HF. If the DX station has a pattern of listening for a few seconds (=FUDtimer) before transmitting, you may have better luck being the LAST station they hear, after the din dies down. The differences are that (1) the ROBOT is a computer and is very predictable and (2) the ROBOT can be working several stations at one time.

[ANS thanks W3IWI for compiling the information for this bulletin]

Note: At press time, the leak problem in Columbia's Hydrogen fuel system had not been resolved and a new launch date had not been set. Usually reliable sources indicated that a launch date before June 8, 1990 was not to be expected and the delays could persist for several more weeks.
/EX
SB ALL @ AMSAT $ANS-153.06
OPERATIONS NET SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 153.06 FROM AMSAT HQ
SILVER SPRING, MD JUNE 2, 1990
TO ALL RADIO AMATEURS BT

AMSAT-NA Operations Net Schedule Announced

AMSAT Operations Nets are planned for the following times. Mode B nets are conducted on an AO-13 downlink frequency of 145.950. Mode J/L nets are conducted on an AO-13 downlink frequency of 435.970.

Date UTC	Time	Phs	Mode	NCS	U.S. Day
04 Jun 90	0100	104	J/L	WB9ANQ	Sunday
15 Jun 90	0115	104	J/L	N5BF	Thursday
26 Jun 90	0115	144	B	N5BF	Monday

For information on the amateur satellite program and how you can participate, contact AMSAT-NA at P.O. Box 27, Washington, DC 20044, phone (301) 589-6062, or contact your local AMSAT Area Coordinator.
/EX
SB ALL @ AMSAT $ANS-153.07
AO-13 TRANSPONDER SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 153.07 FROM AMSAT HQ
SILVER SPRING, MD JUNE 2, 1990
TO ALL RADIO AMATEURS BT

Transponder Schedule for AO-13 Effective 05MAY90

The present transponder schedule for AO-13 is as follows:

Mode-B	: MA 000 to MA 100	
Mode-JL	: MA 100 to MA 125	
Mode-LS	: MA 125 to MA 130	(Mode S Beacon only)
Mode-S	: MA 130 to MA 135	
Mode-BS	: MA 135 to MA 140	
Mode-B	: MA 140 to MA 256	
Omnis	: MA 220 to MA 040	

The best estimate of the current attitude is:

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                    BLON = 179  and  BLAT = -2.1 for 04 Jun 90

Cross mode B and S QSOs are possible during MA 135 to 140.

AO-10's Mode-B Transponder Now Available for Use:

AMSAT-OSCAR-10 appears to be receiving sufficient solar panel illumination
to support Mode-B transponder operations, therefore, the transponder is
available for general use whenever AO-10 is in view at your location.
Please DO NOT use the transponder if the signals are FMing.  The current
estimate of AO-10's attitude is   LON 24 deg   LAT -9 deg.
/EX
SB ALL @ AMSAT $ORBS-153.O
Orbital Elements 153.OSCAR

HR AMSAT ORBITAL ELEMENTS FOR OSCAR SATELLITES
FROM N3FKV LORENA, TX      JUNE 2, 1990
TO ALL RADIO AMATEURS BT

Satellite: AO-10
Catalog number: 14129
Epoch time:      90141.55893209
Element set:     525
Inclination:       25.9838 deg
RA of node:       203.2065 deg
Eccentricity:    0.5966345
Arg of perigee:   144.7263 deg
Mean anomaly:     275.5441 deg
Mean motion:    2.05881342 rev/day
Decay rate:      -3.40e-07 rev/day^2
Epoch rev:            5218

Satellite: UO-11
Catalog number: 14781
Epoch time:      90150.60681341
Element set:     739
Inclination:       97.9502 deg
RA of node:       203.7363 deg
Eccentricity:    0.0012427
Arg of perigee:   309.2706 deg
Mean anomaly:      50.7376 deg
Mean motion:   14.65386404 rev/day
Decay rate:      2.274e-05 rev/day^2
Epoch rev:           33339

Satellite: RS-10/11
Catalog number: 18129
Epoch time:      90150.88464022
Element set:     206
Inclination:       82.9265 deg
RA of node:       341.3123 deg
Eccentricity:    0.0012162
Arg of perigee:   160.4836 deg
Mean anomaly:     199.6814 deg
Mean motion:   13.72090897 rev/day
Decay rate:       1.58e-06 rev/day^2
Epoch rev:           14707

Satellite: AO-13
Catalog number: 19216
Epoch time:      90148.23246392
Element set:     128
Inclination:       56.9522 deg
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RA of node:       153.1540 deg
Eccentricity:    0.6957743
Arg of perigee:   228.0483 deg
Mean anomaly:      47.3201 deg
Mean motion:    2.09698248 rev/day
Decay rate:       1.05e-06 rev/day^2
Epoch rev:            1498

Satellite: FO-20
Catalog number: 20479
Epoch time:      90144.15135168
Element set:      75
Inclination:       99.0426 deg
RA of node:       195.1993 deg
Eccentricity:    0.0541743
Arg of perigee:   102.9595 deg
Mean anomaly:     263.2557 deg
Mean motion:   12.83155784 rev/day
Decay rate:       3.00e-08 rev/day^2
Epoch rev:            1366
/EX
SB ALL @ AMSAT $ORBS-153.D
Orbital Elements 153.MICROS

HR AMSAT ORBITAL ELEMENTS FOR THE MICROSATS
FROM N3FKV LORENA, TX      JUNE 2, 1990
TO ALL RADIO AMATEURS BT

Satellite: UO-14
Catalog number: 20437
Epoch time:      90151.43733054
Element set:     153
Inclination:       98.7024 deg
RA of node:       227.5906 deg
Eccentricity:    0.0010468
Arg of perigee:   201.5841 deg
Mean anomaly:     158.4689 deg
Mean motion:   14.28616292 rev/day
Decay rate:     -2.350e-05 rev/day^2
Epoch rev:            1847

Satellite: AO-16
Catalog number: 20439
Epoch time:      90142.25412747
Element set:      80
Inclination:       98.7039 deg
RA of node:       218.5151 deg
Eccentricity:    0.0010628
Arg of perigee:   229.1515 deg
Mean anomaly:     130.8783 deg
Mean motion:   14.28715882 rev/day
Decay rate:       6.92e-06 rev/day^2
Epoch rev:            1716

Satellite: DO-17
Catalog number: 20440
Epoch time:      90150.23446723
Element set:      83
Inclination:       98.7039 deg
RA of node:       226.4855 deg
Eccentricity:    0.0011009
Arg of perigee:   204.9054 deg
Mean anomaly:     155.1593 deg
Mean motion:   14.28772891 rev/day
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Decay rate:       7.54e-06 rev/day^2
Epoch rev:            1830

Satellite: WO-18
Catalog number: 20441
Epoch time:      90150.64496878
Element set:      83
Inclination:       98.7040 deg
RA of node:       226.9105 deg
Eccentricity:    0.0011547
Arg of perigee:   204.2814 deg
Mean anomaly:     155.7811 deg
Mean motion:   14.28871939 rev/day
Decay rate:       6.67e-06 rev/day^2
Epoch rev:            1836

Satellite: LO-19
Catalog number: 20442
Epoch time:      90150.63884055
Element set:      83
Inclination:       98.7046 deg
RA of node:       226.9194 deg
Eccentricity:    0.0011741
Arg of perigee:   205.3066 deg
Mean anomaly:     154.7526 deg
Mean motion:   14.28941027 rev/day
Decay rate:       6.94e-06 rev/day^2
Epoch rev:            1836
/EX
SB ALL @ AMSAT $ORBS-153.M
Orbital Elements 153.MISC

HR AMSAT ORBITAL ELEMENTS FOR MANNED AND MISCELLANEOUS SATELLITES
FROM N3FKV LORENA, TX      JUNE 2, 1990
TO ALL RADIO AMATEURS BT

Satellite: SALYUT 7
Catalog number: 13138
Epoch time:      90151.88508010
Element set:     296
Inclination:       51.6028 deg
RA of node:        26.7166 deg
Eccentricity:    0.0001926
Arg of perigee:   147.6701 deg
Mean anomaly:     212.4059 deg
Mean motion:   15.62973778 rev/day
Decay rate:     3.0730e-04 rev/day^2
Epoch rev:           46230

Satellite: MIR
Catalog number: 16609
Epoch time:      90151.89394067
Element set:     704
Inclination:       51.6144 deg
RA of node:        52.9043 deg
Eccentricity:    0.0010267
Arg of perigee:   351.6325 deg
Mean anomaly:       8.4458 deg
Mean motion:   15.60876417 rev/day
Decay rate:     2.5638e-04 rev/day^2
Epoch rev:           24555
/EX
SB ALL @ AMSAT $ORBS-153.W
Orbital Elements 153.WEATHER
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HR AMSAT ORBITAL ELEMENTS FOR WEATHER SATELLITES
FROM N3FKV LORENA, TX JUNE 2, 1990
TO ALL RADIO AMATEURS BT

Satellite: NOAA-9
Catalog number: 15427
Epoch time: 90151.33671649
Element set: 588
Inclination: 99.1661 deg
RA of node: 150.7762 deg
Eccentricity: 0.0016197
Arg of perigee: 58.6978 deg
Mean anomaly: 301.5781 deg
Mean motion: 14.12582294 rev/day
Decay rate: 5.35e-06 rev/day^2
Epoch rev: 28160

Satellite: NOAA-10
Catalog number: 16969
Epoch time: 90151.33758012
Element set: 436
Inclination: 98.6028 deg
RA of node: 179.6616 deg
Eccentricity: 0.0013195
Arg of perigee: 324.3723 deg
Mean anomaly: 35.6572 deg
Mean motion: 14.23622739 rev/day
Decay rate: 7.76e-06 rev/day^2
Epoch rev: 19221

Satellite: MET-2/16
Catalog number: 18312
Epoch time: 90148.94694968
Element set: 430
Inclination: 82.5526 deg
RA of node: 305.5432 deg
Eccentricity: 0.0011639
Arg of perigee: 313.9154 deg
Mean anomaly: 46.1044 deg
Mean motion: 13.83647461 rev/day
Decay rate: 2.19e-06 rev/day^2
Epoch rev: 14032

Satellite: MET-2/17
Catalog number: 18820
Epoch time: 90149.04324165
Element set: 281
Inclination: 82.5454 deg
RA of node: 5.6828 deg
Eccentricity: 0.0017771
Arg of perigee: 22.4076 deg
Mean anomaly: 337.7855 deg
Mean motion: 13.84344066 rev/day
Decay rate: 2.59e-06 rev/day^2
Epoch rev: 11753

Satellite: MET-3/2
Catalog number: 19336
Epoch time: 90148.81638992
Element set: 491
Inclination: 82.5393 deg
RA of node: 291.1318 deg
Eccentricity: 0.0018163

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Arg of perigee:     5.3412 deg
Mean anomaly:     354.7893 deg
Mean motion:   13.16897428 rev/day
Decay rate:       3.91e-06 rev/day^2
Epoch rev:            8840

Satellite: NOAA-11
Catalog number: 19531
Epoch time:      90151.29768223
Element set:     287
Inclination:       98.9813 deg
RA of node:        99.5874 deg
Eccentricity:    0.0011697
Arg of perigee:   337.4032 deg
Mean anomaly:      22.6622 deg
Mean motion:   14.11610796 rev/day
Decay rate:       4.22e-06 rev/day^2
Epoch rev:            8658

Satellite: MET-2/18
Catalog number: 19851
Epoch time:      90146.33488642
Element set:     230
Inclination:       82.5223 deg
RA of node:       245.8618 deg
Eccentricity:    0.0016457
Arg of perigee:    68.4243 deg
Mean anomaly:     291.8676 deg
Mean motion:   13.83974338 rev/day
Decay rate:       2.42e-06 rev/day^2
Epoch rev:            6254

Satellite: MET-3/3
Catalog number: 20305
Epoch time:      90148.67705882
Element set:     132
Inclination:       82.5528 deg
RA of node:       231.7493 deg
Eccentricity:    0.0016722
Arg of perigee:    22.7210 deg
Mean anomaly:     337.4648 deg
Mean motion:   13.15857469 rev/day
Decay rate:       4.00e-08 rev/day^2
Epoch rev:            2838
/EX


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